

CLAIM AMENDMENTS

Claims 1-15, 20-25, and 31-50 have been previously cancelled.

Claims 16-19, 26-30, and 61-64 are withdrawn as not reading on the elected species of Figure 11.

Claims 51-60 read on the elected species of Figure 11.

Claim 51 is generic to Figures 8, 9, 10, 11, and 12.

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51. (original) A replaceable cutting element suitable to be mounted on the body of a earth-boring drag bit off center from the axis of rotation of said bit, the element comprising:
- a contact structure including a cutting tip structure and a cutting tapered structure, the tip structure and the tapered structure being concentric with the overall element.
- a mounting structure supporting the tip and tapered structure;
- the contact structure is bilaterally symmetric with a generally obtuse included angle of the tapered structure.
52. (original) A replaceable cutting element as set forth in claim 51, including an engagable structure for removal of the element.
53. (currently amended) A cutting element as in claim 51, wherein a portion of the tip structure is harder than 92 on the Rockwell A Scale, ~~and an outer portion of the tapered structure is softer than 92 on the Rockwell A Scale.~~

54. (original) A cutting element as in claims 51, wherein the tapered structure is generally conical.
55. (original) A cutting element as in claim 51, wherein the trip structure comprises a point.
56. (original) A cutting element as in claim 51, including an engagable structure comprising:
a non-cylindrical surface suitable for the engagement of an extraction tool.
57. (original) A cutting element as set forth in claim 51, including:
a conical helical screw thread on the mounting structure concentric with the contact structure of the element.
58. (original) A cutting element as in claim 51, wherein at least a portion of said tip structure is fabricated from one of a group of materials comprising diamond, a nitride of a metallic element, a carbide of a metallic element, an oxide of a metallic element carbide, a boride of at least one metallic element, a silicide of a metallic element, and carbon nitride.
59. (original) An elongated self-locking replaceable cutting element suitable for use on the body of a rotary earth-boring drag bit off center from the axis of rotation of said bit, the element comprising:
a contact structure comprising a cutting tip structure.
a mounting structure carrying the contact structure and,
a conical helical screw thread on the mounting structure wherein:
the cutting tip structure and the mounting structure are formed generally along the same axis and,

a portion of said cutting tip structure is generally bilaterally symmetrical in at least three equally spaced radial directions from the axis of the element.

60. (currently amended) A cutting element as claimed in claim 59, wherein the included angle of the conical helix is between ~~20°~~ $\frac{1}{2}^\circ$ and 60°.

61. (original) A self-sharpening rotatable cutting element suitable for use on the body of an earth-boring drag bit off center from the axis of rotation of said bit, the element comprising:

a contact structure including a cutting tip structure and a cutting tapered structure formed generally along the same axis,

a mounting structure carrying said cutting tip and tapered structure,

a non-cylindrical structure for the engagement and removal of the element,

a first material of wear resistance on the cutting tip and,

a second region of material of a second wear resistance on the tapered structure

wherein:

the wear resistance of said first material is greater than the wear resistance of said second material,

said tapered structure generally converges with said tip structure and,

a portion of said first material is generally contained within said second material,

a portion of the mounting structure is generally symmetrical in at least three equally spaced radial directions;

the axis of the mounting structure is generally aligned with the axis of the tapered structure.

62. (original) A cutting element as in claim 61, wherein said first material is in the form of a column positioned on the axis of the contact structure.
63. (currently amended) A cutting element as in claim 61 wherein the cross-sectioned area of said material of first hardness is less than 10% ~~and more than 5%~~ of the total cross-sectioned areas of the contact structure.
64. (original) A cutting element as in claim 61, wherein the material of wear resistance on the tapered structure is at least 300 points softer than the wear resistant material of the cutting tip.
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